

Electric Vehicle as Resilient Solution

Knowledge Partnership Week: Innovative Technology & Solutions for Resilient & Smart Community Development

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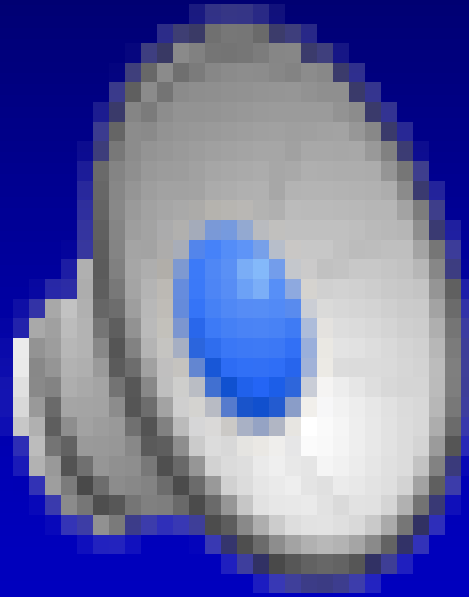
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SAUW/NRM, ADB

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Safa Tempo (Electric Minibuses) in Kathmandu, Nepal

Courtesy: josep montbrió ribelles (YouTube)



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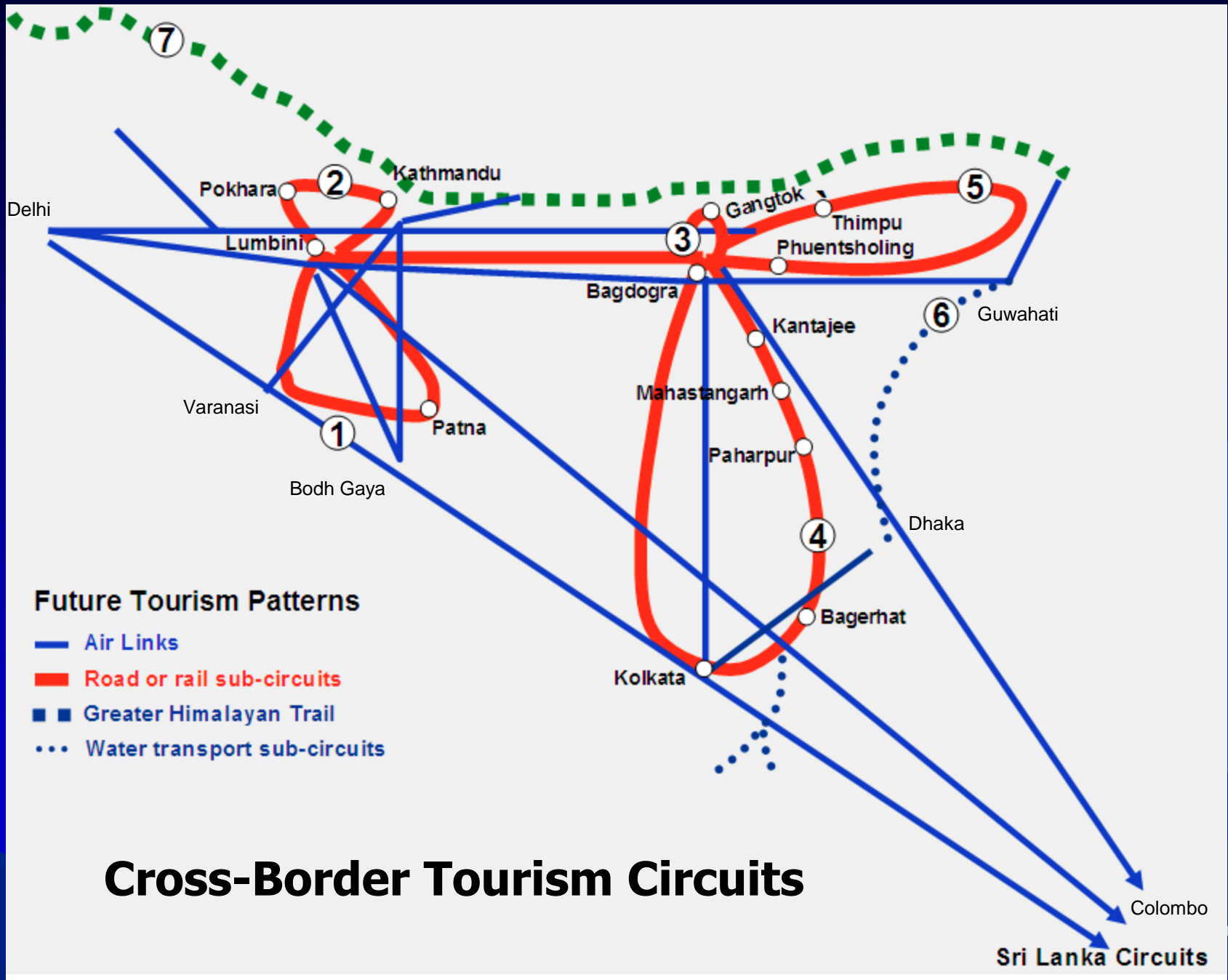
Electric Atutorickshaws in Khulna, Bangladesh

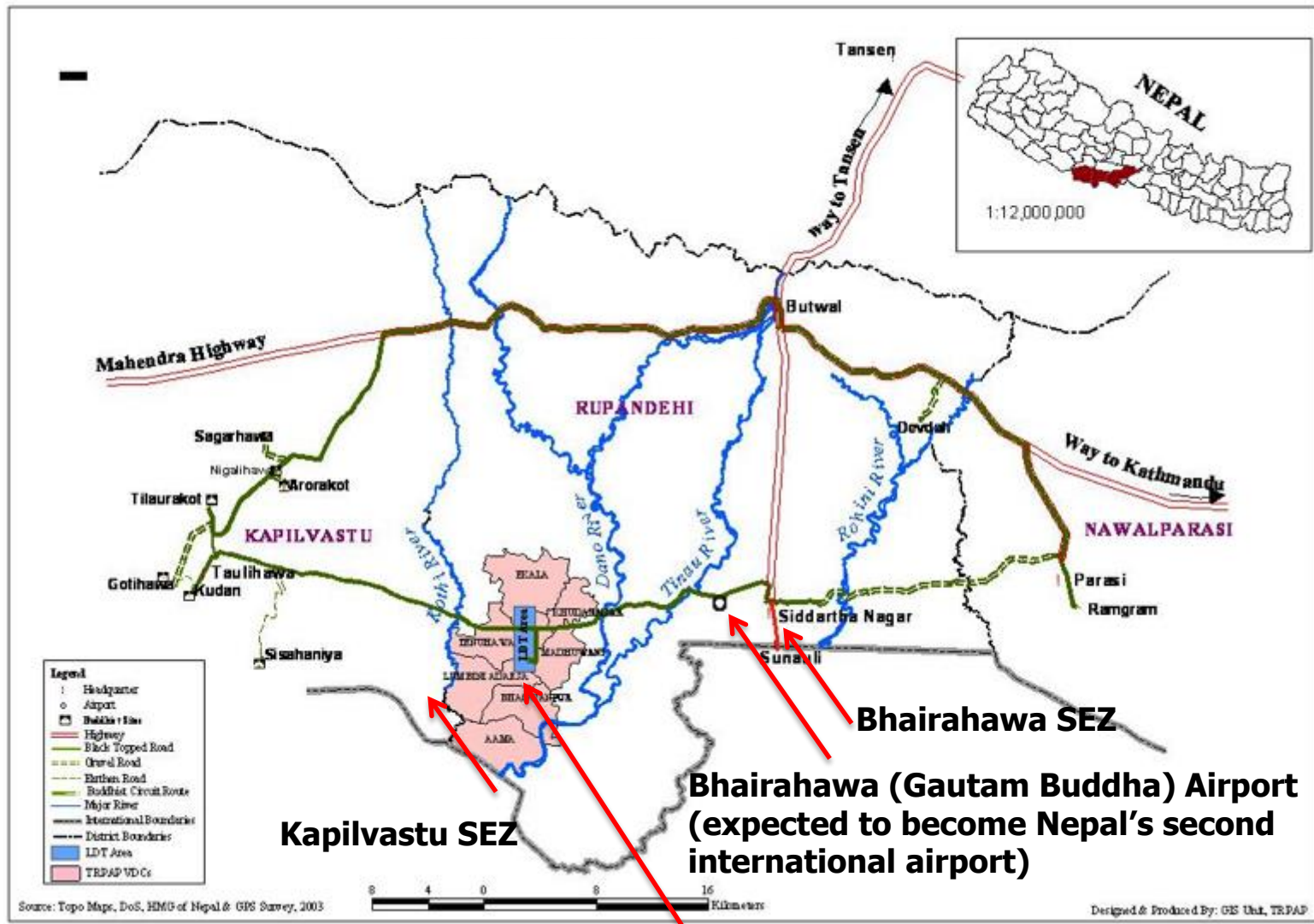


Lumbini Clean Public Transport Project (LCPTP)

**under
South Asia Tourism Infrastructure Development Project
(SATIDP)**

**EV-Based Clean Public Transport
+Decentralized Power Generation
+Vehicle to Home (V2H) System
+Tourism Promotion**





Kapilvastu SEZ

Bhairahawa SEZ

**Bhairahawa (Gautam Buddha) Airport
(expected to become Nepal's second international airport)**

Vehicles



mass-produced
better EVs



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Inside Heritage Site

Oversized fleet of EVs will collectively work as energy storage system (ESS) to address the issues of:

(i) power generation time and vehicle usage time overlap (both daytime);
(ii) unpredictable weather conditions;
and (iii) current load shedding/power outage on the stressed main grid in Nepal.

This is also known as Vehicle to Home (V2H) System.

- Electric Vehicles (EVs)
(common for both inside and outside Heritage Site; mass-produced affordable regular-sized model using Li-ion battery)
- Rapid Chargers/Maintenance Depot
- Solar Power Plant
(350kW)
- Vehicle Stops
- Electric-Power-Assisted Modern Rickshaws

Outside Heritage Site

- Electric Vehicles (EVs)
(common for both inside and outside Heritage Site; mass-produced affordable regular-sized model using Li-ion battery)
- Leasing Arrangements of EVs with existing local transport service providers
(finance lease or operating lease; possible trade-in of highly-polluting existing diesel/gasoline engine vehicles)
- Vehicle Stops

Decentralized Power Generation (Mini Solar Power Plant)



Public Transport Development as the “Driver” of Urban Development

- Transport and housing are “bundled goods”
People are more than happy to invest their own money in their housing. Government should investment in public transport.
- Metro rail is very nice
but prohibitively expensive for our DMCs.
- BRT is very nice and affordable
but still takes painfully long gestation period.
- Therefore, the most plausible and safer first step would be (lease-based) bus fleet renewal/modernization
with immediate benefit and visibility.
- Electric vehicles, whose O&M costs are extremely cheap, are for a few niche markets (or sub-zones). Clean-diesel and CNG buses are good for almost anywhere.

Public Transport Development as the “Driver” of Urban Development (continued)

- (Green-field) suburban expansion and satellite/new town development with proper Transit-Oriented Development (TOD) and Land Value Capture (LVC) scheme
 - Historically the most predominant solution for urbanization (or suburbanization). Development of other infrastructure (e.g., WS&S) would be much easier and cheaper under such scheme (compared with expensive retrofitting).
- Many IT options are becoming available for efficient operations, affordable experimentation and awareness-raising campaign
 - smart card fare collection, real-time bus (or garbage truck) operation monitoring through “information visualization” (for everyone to see easily).

Public Transport Not on “My”(?) Road Space



For More Information

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